

PROJECT NUMBER: 1704
PROJECT TITLE: Supercritical Fluid Processes
PROJECT LEADER: T. M. Howell
PERIOD COVERED: February, 1988

I. LOW NICOTINE

A. Objective: Pilot plant support.

B. Results: A total of 29 runs were completed on the one liter laboratory system to help establish operating conditions at the Bermuda Hundred pilot plant. The goal was to determine the minimum AB required to extract to 97% nicotine removal using 200 M/M CO₂.

Results obtained for five component blends are as follows:

<u>Blend</u>	<u>Code</u>	<u>% AB</u>	<u>% Red</u>	<u>Ext Nic %</u>
MT Oriental	J8CP	3.00	92.0	0.07
Thin Bright	J8CL	3.50	97.5	0.07
Bodied Brt	J8CM	4.00	96.0	0.14
Thin Burley	J8CO	1.00	96.2	0.11
Bodied Burl	J8CN	1.50	96.0	0.15

AB % is target AB.

In addition to the above blends, conditions were established for the components of a new ART blend. Results are as follows:

Flue cured	J8HQ	3.80	94.0	0.17
Art Burley	J8HP	1.75	97.0	0.12
Art Blend	J8HO	3.40	97.0	0.09

C. Plans: This work is ongoing.

II. LOW NICOTINE

A. Objective: Relocate the one liter laboratory to D201.

B. Results: Fabrication of the new one liter lab system in D201 is complete. After two shakedown runs, six runs were made on the new system which duplicated runs made in the 7th floor lab to determine if the extractions were comparable. In all cases the D201 system performed as expected. The 7th floor lab has been taken out of service and operations are now conducted in D201.

C. Plans: Completed.

III. LOW NICOTINE

- A. Objective: Develop fundamental understanding of extraction behavior.
- B. Results: A correlation for determining AB requirements from initial filler pH and filler titratable acidity was found to hold for the blend components studied to date. The relationship is expressed in milliequivalents of base and hydrogen ion concentration. Presently the AB value obtained from the correlation is for extraction using 200 M/M CO₂.
- C. Plans: Develop a data base with a range of fillers to better define the correlation for all tobacco types.

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